

CLAIMS

I/we claim:

1. A method of obtaining a purified sodium bicarbonate comprising:
utilizing a sodium carbonate containing effluent waste-water stream from a monohydrate sodium carbonate production process as a feed stream in a sodium bicarbonate production process, wherein said monohydrate sodium carbonate production process utilizes sodium carbonate input from trona ore, and wherein the said monohydrate sodium carbonate production process produces a purge stream containing at least about 20% and typically 30% sodium carbonate by weight.
2. The method of claim 1 wherein said effluent waste water stream is used as a feed from which is first extracted sodium carbonate decahydrate and said sodium carbonate decahydrate is used as a feed stream for said sodium bicarbonate production process.
3. The method of claim 2 wherein said sodium bicarbonate production process also produces a waste-water effluent stream, and wherein said sodium carbonate decahydrate extraction also produces a waste-water effluent stream, and wherein the total of effluent waste-water streams from the production of sodium bicarbonate and sodium carbonate decahydrate is less than the amount of the effluent steam from the said sodium carbonate production facility.

4. The method of claim 1 wherein said sodium bicarbonate is of greater purity than sodium bicarbonate produced by a non-waste-water effluent stream sodium bicarbonate production process.
5. A method of increasing the production of sodium bicarbonate and/or sodium carbonate recovered per unit of trona ore mined comprising :
 - a) Mining trona ore and utilizing a monohydrate process to convert said trona ore into sodium carbonate (1) with concomitant production of a first waste-water effluent stream containing a substantial percentage of sodium carbonate and (2); converting said sodium carbonate in said first waste water effluent stream into sodium bicarbonate.
6. A high purity sodium bicarbonate resulting from the process of claim 5, wherein said high purity is at least as great as that produced from a non-waste-water effluent sodium bicarbonate production process.
7. A method of reducing waste-water effluent stream produced during the conversion of trona ore into sodium bicarbonate comprising:
first converting said solution-mined trona according to a monohydrate process into sodium carbonate with the concomitant production of a first waste-water effluent stream containing sodium carbonate; and utilizing said waste-water effluent as a feed stream for a process of converting sodium carbonate into sodium

carbonate decahydrate with the concomitant production of a first downstream waste-water effluent stream, and converting said sodium carbonate decahydrate to sodium bicarbonate with the concomitant production of a second downstream waste-water effluent stream, whereby the total amount of effluent waste-water in the two aforesaid downstream waste water effluent streams is less than the amount of the effluent waste water in the said first waste water effluent stream.